

SEQUENCE LISTING

<110> KYOWA HAKKO KOGYO CO., LTD.,

<120> NOVEL POLYPEPTIDE

<130> 766.52

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<170> PatentIn Ver. 2.0

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<211> 4173

<212> DNA

<213> Mouse

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<221> CDS

<222> (107)..(4021)

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Cys	Ser	Gly	Ser	Val	Met	Ser	Glu	Arg	Val	Ser	Gly	Leu	Ala	Gly	Ser	
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Ile	Tyr	Arg	Glu	Phe	Glu	Arg	Leu	Ile	His	Cys	Tyr	Asp	Glu	Glu	Val	
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Val	Lys	Glu	Leu	Met	Pro	Leu	Val	Val	Asn	Val	Leu	Glu	Asn	Leu	Asp	
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Gln	Thr	Arg	Gln	Leu	Glu	Leu	Lys	Ala	Lys	Asn	Tyr	Ala	Asp	Gln	Ile	
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gaa caa gag aag aaa gaa ctc cag atc cag gta gaa cat tat gag ttt 499
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Pro	Asn	Asp	Glu	Met	Ser	Glu	Ser	Gly	Gln	Ser	Ser	Ala	Ala	Ala	Thr	
		230					235					240				
ccc	agt	acc	aca	ggg	acc	aag	tcc	aac	aca	ccc	acg	tcc	tcc	gtg	ccc	883
Pro	Ser	Thr	Thr	Gly	Thr	Lys	Ser	Asn	Thr	Pro	Thr	Ser	Ser	Val	Pro	
	245					250					255					
tca	gca	gca	gtc	acg	cca	ctc	aac	gag	agc	cta	cag	ccc	ctg	ggg	gac	931
Ser	Ala	Ala	Val	Thr	Pro	Leu	Asn	Glu	Ser	Leu	Gln	Pro	Leu	Gly	Asp	
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tat	gtc	agt	gtc	aca	aag	aac	aac	aag	cag	gcc	cga	gag	aag	cgc	aat	979
Tyr	Val	Ser	Val	Thr	Lys	Asn	Asn	Lys	Gln	Ala	Arg	Glu	Lys	Arg	Asn	
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agc	cgt	aac	atg	gag	gtc	cag	gtc	acc	caa	gag	atg	cgg	aac	gtc	agt	1027
Ser	Arg	Asn	Met	Glu	Val	Gln	Val	Thr	Gln	Glu	Met	Arg	Asn	Val	Ser	
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Ile	Gly	Met	Gly	Ser	Ser	Asp	Glu	Trp	Ser	Asp	Val	Gln	Asp	Ile	Ile	
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Asp	Ser	Thr	Pro	Glu	Leu	Asp	Val	Cys	Pro	Glu	Thr	Arg	Leu	Glu	Arg	
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Asn	Thr	Asp	Ser	Leu	Tyr	His	Glu	Leu	Ser	Thr	Ala	Gly	Ser	Glu	Val	
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atc	ggg	gat	gtg	gac	gag	gga	gct	gat	ctc	cta	ggg	gag	ttt	tca	gtg	1267

Ile	Gly	Asp	Val	Asp	Glu	Gly	Ala	Asp	Leu	Leu	Gly	Glu	Phe	Ser	Val		
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Arg	Asp	Asp	Phe	Phe	Gly	Met	Gly	Lys	Glu	Val	Gly	Asn	Leu	Leu	Leu		
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gag	aac	tca	cag	ctt	cta	gag	aca	aaa	aat	gct	tta	aat	gta	gtg	aag	1363	
Glu	Asn	Ser	Gln	Leu	Leu	Glu	Thr	Lys	Asn	Ala	Leu	Asn	Val	Val	Lys		
	405					410					415						
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Asn	Asp	Leu	Ile	Ala	Lys	Val	Asp	Gln	Leu	Ser	Gly	Glu	Gln	Glu	Val		
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Ala	Val	Thr	Ala	Arg	Arg	Glu	Pro	Arg	Glu	Glu	Val	Glu	Asp	Val	Ser		
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Ser	Tyr	Leu	Cys	Thr	Glu	Leu	Asp	Lys	Ile	Pro	Met	Ala	Gln	Arg	Arg		
	485				490						495						
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Arg	Phe	Thr	Arg	Val	Glu	Met	Ala	Arg	Val	Leu	Met	Glu	Arg	Asn	Gln		
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Tyr	Lys	Glu	Arg	Leu	Met	Glu	Leu	Gln	Glu	Ala	Val	Arg	Trp	Thr	Glu		
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Met	Ile	Arg	Ala	Ser	Arg	Glu	His	Pro	Ser	Val	Gln	Glu	Lys	Lys	Lys		
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Pro	Pro	Pro	Ala	Lys	Arg	Ser	Tyr	Pro	Ser	Val	Asn	Ile	His	Tyr	Lys		
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Gln	Ile	Ser	Ala	Gly	Ser	Arg	Pro	Leu	Glu	Phe	Phe	Pro	Asp	Asp	Asp		
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Cys	Thr	Ser	Ser	Ala	Arg	Arg	Glu	Gln	Lys	Arg	Glu	Gln	Tyr	Arg	Gln		
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Ile	Ser	Ser	Ile	Pro	Ala	Ala	Ser	Asp	Ser	Asp	Tyr	Pro	Pro	Gly	Glu		
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Gln	Ser	Thr	Glu	Glu	Ala	Thr	Glu	Ala	Thr	Glu	Val	Pro	Asp	Pro	Gly	
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Thr	Met	Trp	Leu	Gly	Ala	Gln	Asn	Gly	Trp	Leu	Tyr	Val	His	Ser	Ala	
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Val	Ala	Asn	Trp	Lys	Lys	Cys	Leu	His	Ser	Ile	Lys	Leu	Lys	Asp	Ser	
			965			970					975					
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Val	Leu	Ser	Leu	Val	His	Val	Lys	Gly	Arg	Val	Leu	Val	Ala	Leu	Ala	
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Leu	Ser	Asn	Tyr	His	Leu	Met	Asp	Leu	Gly	His	Pro	His	His	Ser	Ile	
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Lys	Val	His	Val	Ile	Gln	Pro	Lys	Thr	Met	Gln	Ile	Glu	Lys	Ser	Phe	
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Tyr His Ala His Thr His Gln His Leu Gln Asp Val Asp Ile Glu Pro
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 His Arg Gly Gln Leu Leu Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr
 1160 1165 1170

tct ggg gag ggg acc cgc cca ggg ggc atc atc cat gtg tat ggg gac 3667
 Ser Gly Glu Gly Thr Arg Pro Gly Gly Ile Ile His Val Tyr Gly Asp
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 Phe Val Ser Val Pro Gly Asn Val Leu Ala Thr Leu Asn Gly Ser Val
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 Leu Asp Ser Pro Ser Glu Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp
 1240 1245 1250

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 Ala Glu Gly Gln Lys Leu Lys Asn Ala Leu Val Leu Ser Gly Gly Glu
 1255 1260 1265

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 1270 1275 1280

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 Met Met Glu
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 Ile Gln Met Asp Glu Gly Gly Val Val Val Tyr Gln Asp Asp Tyr
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 Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu Ala Gly Ser
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 Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp Glu Glu Val
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 Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu Asn Leu Asp
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 Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu Glu Leu Leu
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 Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg Glu Lys Ala
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 Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu Asp Ala Leu
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 Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala Asp Gln Ile
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 Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val Glu His Ile

165	170	175	
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Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu Gly Leu Arg Ala	
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Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg Pro Gly Gly Ile	
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Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala Ala Ser Ser Phe	
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Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys Phe His Gly His	
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Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile Gly Asp Gly	
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Ser Tyr Thr Pro Glu	
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Pro Pro Ile Met Asn Gly Pro Met His Pro Arg Pro Leu Val Ala Leu
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Leu Asp Gly Arg Asp Cys Thr Val Glu Met Pro Ile Leu Lys Asp Val
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gcc aca gta gcc ttc tgt gat gca cag tcc aca cag gag atc cat gag 199
Ala Thr Val Ala Phe Cys Asp Ala Gln Ser Thr Gln Glu Ile His Glu
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Lys Val Leu Asn Glu Ala Val Gly Ala Leu Met Tyr His Thr Ile Thr
55 60 65

ctg acc aga gaa gat ctg gag aag ttt aaa gct ctt aga atc atc gtc 295
Leu Thr Arg Glu Asp Leu Glu Lys Phe Lys Ala Leu Arg Ile Ile Val
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Arg Ile Gly Ser Gly Phe Asp Asn Ile Asp Ile Lys Ser Ala Gly Asp
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Leu Gly Ile Ala Val Cys Asn Val Pro Ala Ala Ser Val Glu Glu Thr
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Gln Ile Arg Glu Val Ala Ser Gly Ala Ala Arg Ile Arg Gly Glu Thr
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Asp Gly Ile Glu Arg Ala Leu Gly Leu Gln Arg Val Ser Thr Leu Gln	
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Gln Gly Ala Phe Leu Val Asn Thr Ala Arg Gly Gly Leu Val Asp Glu	
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Lys Asp Ala Pro Asn Leu Ile Cys Thr Pro His Ala Ala Trp Tyr Ser	
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Arg Ala Ile Thr Gly Arg Ile Pro Asp Ser Leu Lys Asn Cys Val Asn	
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Lys Asp His Leu Thr Ala Ala Thr His Trp Ala Ser Met Asp Pro Ala	
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425 430	

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Ile Thr Ser Arg Ile Lys Asn Leu Leu Arg Ser Pro Ser Ile Lys Leu																		
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Arg Arg Ser Lys Ala Gly Asn Arg Arg Glu Asp Leu Ser Ser Lys Val																		
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Thr Leu Glu Lys Val Leu Gly Val Thr Val Ser Gly Gly Arg Gly Leu																		
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Val Val Leu Phe Asn Pro Arg Lys His Lys Gln His His Ile Leu Asn																		
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Ser Ser Arg Lys Thr Ile Thr Ala Leu Ala Phe Ser Pro Asp Gly Lys																		
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Tyr Leu Val Thr Gly Glu Ser Gly His Met Pro Ala Val Arg Val Trp																		
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Asp Val Ala Glu Arg Ser Gln Val Ala Glu Leu Gln Glu His Lys Tyr																		
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Phe	Leu	Ser	Thr	Leu	Pro	Arg	Pro	His	Ala	Leu	Gly	Thr	Asp	Ile	Ala	
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Leu	Arg	Ser	Leu	Ser	His	Trp	Glu	Met	Ser	Arg	Ala	Gln	Glu	Thr	Met		
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Glu	Tyr	Leu	Asp	Pro	Ala	Pro	Val	Ala	Asn	Thr	Gly	Pro	Lys	Arg	Arg		
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Gly	Arg	Trp	Ala	Gln	Pro	Gly	Val	Glu	Leu	Ser	Val	Arg	Ser	Met	Leu		
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Gln	Asp	Ser	Leu	Ala	Val	Ser	Pro	Ala	Gly	Pro	Gly	Lys	His	Gly	Pro		
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Gln	Ala	Pro	Glu	Leu	Ser	Cys	Val	Ser	Gln	Asn	Glu	Arg	Ala	Pro	Arg		
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Glu	Asp	Gly	Ile	Val	Tyr	Pro	Glu	Pro	Ser	Asp	Ser	Pro	Thr	Met	Asp		
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Thr	Ser	Ala	Phe	Gln	Val	Gln	Ala	Pro	Thr	Gly	Gly	Ser	Leu	Gly	Arg		
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Met	Tyr	Pro	Gly	Ser	Arg	Gly	Ser	Glu	Lys	His	Ser	Pro	Asp	Ser	Ala		
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Asn	Glu	Asp	Ser	Glu	Ser	Thr	Glu	Pro	Leu	Ser	Val	Asp	Gly	Ile	Ser		
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Ser	Asp	Leu	Glu	Glu	Pro	Ala	Glu	Gly	Asp	Glu	Asp	Glu	Glu	Glu	Glu		
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Asp	Gln	Glu	Gln	Phe	Leu	Lys	Gln	Leu	Phe	Glu	Thr	Leu	Ala	Asn	Gly		
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act	gct	cca	ggg	ggc	cca	gca	cgg	gtg	cta	gag	agg	aca	gag	tct	cgg	3437	
Thr	Ala	Pro	Gly	Gly	Pro	Ala	Arg	Val	Leu	Glu	Arg	Thr	Glu	Ser	Arg		
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Ser	Ile	Ser	Ser	Arg	Phe	Leu	Leu	Gln	Val	Gln	Thr	Leu	Pro	Leu	Arg		
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Gln Val Ser Gln Val Ser Gly Glu Gln Leu Lys Gly Ser Gly Ala Thr	
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Pro Lys Gln Val Ala Pro Val Leu Leu Thr Arg Arg Arg Asn Asn Leu	
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Asp Asn Ser Trp Ala Ser Lys Lys Met Ala Ala Thr Arg Pro Leu Ala	
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Val Pro Ser Ser Arg Pro Leu Leu Phe Arg Glu Ala Glu Thr Gln Gly	
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Ser Tyr Gln Asn His Thr Thr Ser Ser Met Ala Lys Leu Ala Arg Ser	
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Ile Ser Val Gly Glu Asn Pro Gly Leu Ala Thr Glu Pro Gln Ala Pro	
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Glu Gln Ser Gly Pro Leu Arg Glu Pro Arg Lys Ala His Thr Thr Val	
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Glu Lys His Ser Cys Leu Gly Glu Gly Thr Thr His Lys Ser Arg Thr	
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Glu Cys Gln Ala Tyr Pro Gly Pro Asn His Pro Cys Arg Gln Gln Leu
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 Pro Val Asn Asn Leu Leu Gln Ala Glu Ser Leu Gln Pro Leu Ser Pro
 1370 1375 1380
 gag aag act cgt aac ccc gtg gaa agc agc agg cca ggg gta gcc ctg 4349
 Glu Lys Thr Arg Asn Pro Val Glu Ser Ser Arg Pro Gly Val Ala Leu
 1385 1390 1395 1400
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 Ser Gln Asp Ser Glu Leu Ala Leu Ser Leu Gln Gln Cys Glu Gln Leu
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 Val Ala Glu Leu Gln Gly Asn Val Arg Gln Ala Val Glu Leu Tyr Arg
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 gcg gtg acc agc tgt aag aca cct tcg gca gag caa agt cac atc acc 4493
 Ala Val Thr Ser Cys Lys Thr Pro Ser Ala Glu Gln Ser His Ile Thr
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 Arg Leu Leu Arg Asp Thr Phe Ser Pro Val Arg Gln Glu Leu Glu Val
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 ctg ggg ctg cgg ccg acc tcg gtg gat ccc gct ctg agg cgg cgg cgg 96
 Leu Gly Leu Arg Pro Thr Ser Val Asp Pro Ala Leu Arg Arg Arg Arg
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 cgg ggc ccc aga aac aag aag cgc ggc tgg agg agg ctc gcc gag gag 144
 Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg Arg Leu Ala Glu Glu

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ccg ctg ggg tta gag gtc gac cag ttc ctg gaa gac gtc cgg cta cag			192
Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu Asp Val Arg Leu Gln			
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gag cgc acg acc ggt ggc ttg ttg gca gag gcc cca aac gaa aag ctc			240
Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu Ala Pro Asn Glu Lys Leu			
65	70	75	80
ttc ttc gtg gac aca gga ttc aag aga aaa gaa cca aga aag aag agg			288
Phe Phe Val Asp Thr Gly Phe Lys Arg Lys Glu Pro Arg Lys Lys Arg			
85	90	95	
acc ttg gtc cag aag aag tca cag cgt ctc cag aaa ccc tta cgg gtt			336
Thr Leu Val Gln Lys Lys Ser Gln Arg Leu Gln Lys Pro Leu Arg Val			
100	105	110	
gac ctt gcc ctt gag aat cat tct aag atc cct gct ccc aaa gac atc			384
Asp Leu Ala Leu Glu Asn His Ser Lys Ile Pro Ala Pro Lys Asp Ile			
115	120	125	
ctc gca cat cag gtc cct aat gcc aag aag ctc agg cga aag gag gag			432
Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu Arg Arg Lys Glu Glu			
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Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu Pro Arg Asp Val Arg			
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aag gca cag gcc cga ctc ctt agc cct ccc aca cca aag gcc aaa cct			528
Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro Thr Pro Lys Ala Lys Pro			
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Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe Tyr Asp Leu Trp Asn Pro			
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Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly Gln Asp Ala Phe Phe Leu			
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Glu Gln Thr Lys Lys Lys Gly Val Arg Arg Pro Gln Arg Leu His Ile			
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Pro Ala Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly
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Trp Arg Arg Leu Ala Glu Glu Pro Leu Gly Leu Glu Val Asp Gln Phe
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ctg gaa gac gtc cgg cta cag gag cgc acg acc ggt ggc ttg ttg gca    243
Leu Glu Asp Val Arg Leu Gln Glu Arg Thr Thr Gly Gly Leu Leu Ala
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gag gcc cca aac gaa aag ctg ttc ttc gtg gac aca gga ttc aag aga    291
Glu Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Phe Lys Arg
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aaa gaa cca aga aag aag agg acc ttg gtc cag aag aag tca cag cgt    339
Lys Glu Pro Arg Lys Lys Arg Thr Leu Val Gln Lys Lys Ser Gln Arg
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ctc cag aaa ccc tta cgg gtt gac ctt gcc ctt gag aat cat tct aag    387
Leu Gln Lys Pro Leu Arg Val Asp Leu Ala Leu Glu Asn His Ser Lys
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atc cct gct ccc aaa gac atc ctg gca cat cag gtc cct aat gcc aag    435
Ile Pro Ala Pro Lys Asp Ile Leu Ala His Gln Val Pro Asn Ala Lys
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aag ctg agg cga aag gag gag tta tgg gag aaa ctg gca aag cag ggc    483
Lys Leu Arg Arg Lys Glu Glu Leu Trp Glu Lys Leu Ala Lys Gln Gly
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gaa ctg ccc agg gat gtg cgc aag gca cag gcc cga ctg ctt agc cct    531
Glu Leu Pro Arg Asp Val Arg Lys Ala Gln Ala Arg Leu Leu Ser Pro
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Pro Thr Pro Lys Ala Lys Pro Gly Pro Gln Asp Ile Ile Glu Arg Pro
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ttc tat gac ctg tgg aac cca gac aac cct ctg gac acg cct ttg att    627
Phe Tyr Asp Leu Trp Asn Pro Asp Asn Pro Leu Asp Thr Pro Leu Ile
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Gly Gln Asp Ala Phe Phe Leu Glu Gln Thr Lys Lys Lys Gly Val Arg
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Val	Ile	Pro	Ala	Gly	Ala	Ser	Tyr	Asn	Pro	Thr	Phe	Glu	Asp	His	Gln		
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Lys	Ala	Ala	Arg	Lys	Leu	Arg	Val	Gln	Gln	Ala	Ala	Leu	Arg	Ala	Ala		
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Ile	Arg	Arg	Leu	Ala	Glu	Ala	Asp	Lys	Pro	Arg	Arg	Leu	Gly	Arg	Leu		
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Lys	Tyr	Gln	Ala	Pro	Asp	Ile	Asp	Val	Gln	Leu	Ser	Ser	Glu	Leu	Ser		
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Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
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Glu Lys Ala Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu
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Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
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Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
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Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
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Tyr Asn Ala Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val
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Glu His Ile Glu Arg Ser Lys Met Gln Gln Val Gly Gly Ser Gly Gln
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 Asp Val Cys Pro Glu Thr Arg Leu Glu Arg Thr Gly Ser Ser Pro Thr
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 Gln Gly Ile Val Asn Lys Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr
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 Phe Ser Arg Leu Phe Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg
 545 550 555 560

Ser Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro Thr Ala Ala Gly
 565 570 575
 Phe Ser Gln Arg Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser
 580 585 590
 Arg Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr Ser Ser Ala Arg
 595 600 605
 Arg Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg
 610 615 620
 Asn Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser Leu Pro Ala Lys
 625 630 635 640
 Tyr Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys
 645 650 655
 Asn Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro
 660 665 670
 Ser Thr Lys Leu Trp Cys Ala Ala Gly Val Asn Leu Ser Gly Trp Lys
 675 680 685
 Pro His Glu Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg
 690 695 700
 Asp Pro Leu Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr
 705 710 715 720
 His Pro Ser Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp
 725 730 735
 Ala Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser
 740 745 750
 Lys Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr Ile Val Asp Gln
 755 760 765
 Phe Thr Val Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala
 770 775 780
 Ala Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp
 785 790 795 800
 Val Asn Pro Glu Asp Ser Gly Ala Asp Gly Val Leu Ala Gly Ile Thr
 805 810 815
 Leu Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg Ser Asn Cys Ser
 820 825 830
 Ser Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala
 835 840 845
 Thr Thr Ala Asn Gly Lys Val Asn Pro Ser Gln Ser Thr Glu Glu Ala
 850 855 860
 Thr Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser Glu Ser Glu Ala
 865 870 875 880

Thr Thr Val Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro
 885 890 895
 Ala Pro Thr Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser
 900 905 910
 Glu Ser Asn Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu
 915 920 925
 Leu Ser Thr Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala
 930 935 940
 Gln Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala Asn Trp Lys Lys
 945 950 955 960
 Cys Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His
 965 970 975
 Val Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile
 980 985 990
 Phe His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu
 995 1000 1005
 Met Asp Leu Gly His Pro His His Ser Ile Arg Cys Met Ala Val Val
 1010 1015 1020
 Asn Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln
 1025 1030 1035 1040
 Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg
 1045 1050 1055
 Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val
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 Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His
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 Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu
 1090 1095 1100
 Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu
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 Ile Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile
 1125 1130 1135
 Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu
 1140 1145 1150
 Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg
 1155 1160 1165
 Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala
 1170 1175 1180
 Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys
 1185 1190 1195 1200

Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly
 1205 1210 1215
 Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu
 1220 1225 1230
 Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu
 1235 1240 1245
 Lys Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg
 1250 1255 1260
 Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val
 1265 1270 1275 1280
 Asn Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile
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 Val Trp Gln Val Ser Tyr Thr Pro Glu
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 <212> PRT
 <213> Mouse

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 Asp Asp Tyr Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu
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 Ala Gly Ser Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp
 35 40 45
 Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
 50 55 60
 Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
 65 70 75 80
 Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
 85 90 95
 Glu Lys Ala Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu
 100 105 110
 Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
 115 120 125
 Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
 130 135 140
 Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
 145 150 155 160
 Tyr Asn Ala Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val
 165 170 175

Glu	His	Ile	Glu	Arg	Ser	Lys	Met	Gln	Gln	Val	Gly	Gly	Ser	Gly	Gln	180	185	190
Thr	Glu	Ser	Ser	Leu	Pro	Gly	Arg	Ser	Pro	Arg	Gln	Ser	Trp	Arg	Lys	195	200	205
Ser	Arg	Lys	Glu	Arg	Pro	Thr	Ser	Leu	Asn	Val	Phe	Pro	Leu	Ala	Asp	210	215	220
Gly	Met	Cys	Pro	Asn	Asp	Glu	Met	Ser	Glu	Ser	Gly	Gln	Ser	Ser	Ala	225	230	235
Ala	Ala	Thr	Pro	Ser	Thr	Thr	Gly	Thr	Lys	Ser	Asn	Thr	Pro	Thr	Ser	245	250	255
Ser	Val	Pro	Ser	Ala	Ala	Val	Thr	Pro	Leu	Asn	Glu	Ser	Leu	Gln	Pro	260	265	270
Leu	Gly	Asp	Tyr	Val	Ser	Val	Thr	Lys	Asn	Asn	Lys	Gln	Ala	Arg	Glu	275	280	285
Lys	Arg	Asn	Ser	Arg	Asn	Met	Glu	Val	Gln	Val	Thr	Gln	Glu	Met	Arg	290	295	300
Asn	Val	Ser	Ile	Gly	Met	Gly	Ser	Ser	Asp	Glu	Trp	Ser	Asp	Val	Gln	305	310	315
Asp	Ile	Ile	Asp	Ser	Thr	Pro	Glu	Leu	Asp	Val	Cys	Pro	Glu	Thr	Arg	325	330	335
Leu	Glu	Arg	Thr	Gly	Ser	Ser	Pro	Thr	Gln	Gly	Ile	Val	Asn	Lys	Ala	340	345	350
Phe	Gly	Ile	Asn	Thr	Asp	Ser	Leu	Tyr	His	Glu	Leu	Ser	Thr	Ala	Gly	355	360	365
Ser	Glu	Val	Ile	Gly	Asp	Val	Asp	Glu	Gly	Ala	Asp	Leu	Leu	Gly	Glu	370	375	380
Phe	Ser	Val	Arg	Asp	Asp	Phe	Phe	Gly	Met	Gly	Lys	Glu	Val	Gly	Asn	385	390	395
Leu	Leu	Leu	Glu	Asn	Ser	Gln	Leu	Leu	Glu	Thr	Lys	Asn	Ala	Leu	Asn	405	410	415
Val	Val	Lys	Asn	Asp	Leu	Ile	Ala	Lys	Val	Asp	Gln	Leu	Ser	Gly	Glu	420	425	430
Gln	Glu	Val	Leu	Lys	Gly	Glu	Leu	Glu	Ala	Ala	Lys	Gln	Ala	Lys	Val	435	440	445
Lys	Leu	Glu	Asn	Arg	Ile	Lys	Glu	Leu	Glu	Glu	Glu	Leu	Lys	Arg	Val	450	455	460
Lys	Ser	Glu	Ala	Val	Thr	Ala	Arg	Arg	Glu	Pro	Arg	Glu	Glu	Val	Glu	465	470	475
Asp	Val	Ser	Ser	Tyr	Leu	Cys	Thr	Glu	Leu	Asp	Lys	Ile	Pro	Met	Ala	485	490	495

Gln	Arg	Arg	Arg	Phe	Thr	Arg	Val	Glu	Met	Ala	Arg	Val	Leu	Met	Glu	
			500					505					510			
Arg	Asn	Gln	Tyr	Lys	Glu	Arg	Leu	Met	Glu	Leu	Gln	Glu	Ala	Val	Arg	
		515					520					525				
Trp	Thr	Glu	Met	Ile	Arg	Ala	Ser	Arg	Glu	His	Pro	Ser	Val	Gln	Glu	
	530					535					540					
Lys	Lys	Lys	Ser	Thr	Ile	Trp	Gln	Phe	Phe	Ser	Arg	Leu	Phe	Ser	Ser	
545					550					555					560	
Ser	Ser	Ser	Pro	Pro	Pro	Ala	Lys	Arg	Ser	Tyr	Pro	Ser	Val	Asn	Ile	
				565					570					575		
His	Tyr	Lys	Ser	Pro	Thr	Ala	Ala	Gly	Phe	Ser	Gln	Arg	Arg	Ser	His	
			580					585					590			
Ala	Leu	Cys	Gln	Ile	Ser	Ala	Gly	Ser	Arg	Pro	Leu	Glu	Phe	Phe	Pro	
		595					600					605				
Asp	Asp	Asp	Cys	Thr	Ser	Ser	Ala	Arg	Arg	Glu	Gln	Lys	Arg	Glu	Gln	
	610					615					620					
Tyr	Arg	Gln	Val	Arg	Glu	His	Val	Arg	Asn	Asp	Asp	Gly	Arg	Leu	Gln	
625					630					635					640	
Ala	Cys	Gly	Trp	Ser	Leu	Pro	Ala	Lys	Tyr	Lys	Gln	Leu	Ser	Pro	Asn	
				645					650					655		
Gly	Gly	Gln	Glu	Asp	Thr	Arg	Met	Lys	Asn	Val	Pro	Val	Pro	Val	Tyr	
			660					665					670			
Cys	Arg	Pro	Leu	Val	Glu	Lys	Asp	Pro	Ser	Thr	Lys	Leu	Trp	Cys	Ala	
		675					680					685				
Ala	Gly	Val	Asn	Leu	Ser	Gly	Trp	Lys	Pro	His	Glu	Glu	Asp	Ser	Ser	
	690					695					700					
Asn	Gly	Pro	Lys	Pro	Val	Pro	Gly	Arg	Asp	Pro	Leu	Thr	Cys	Asp	Arg	
705					710					715					720	
Glu	Gly	Glu	Gly	Glu	Pro	Lys	Ser	Thr	His	Pro	Ser	Pro	Glu	Lys	Lys	
				725					730					735		
Lys	Ala	Lys	Glu	Thr	Pro	Glu	Ala	Asp	Ala	Thr	Ser	Ser	Arg	Val	Trp	
			740					745					750			
Ile	Leu	Thr	Ser	Thr	Leu	Thr	Thr	Ser	Lys	Val	Val	Ile	Ile	Asp	Ala	
		755					760					765				
Asn	Gln	Pro	Gly	Thr	Ile	Val	Asp	Gln	Phe	Thr	Val	Cys	Asn	Ala	His	
	770					775					780					
Val	Leu	Cys	Ile	Ser	Ser	Ile	Pro	Ala	Ala	Ser	Asp	Ser	Asp	Tyr	Pro	
785					790					795					800	
Pro	Gly	Glu	Met	Phe	Leu	Asp	Ser	Asp	Val	Asn	Pro	Glu	Asp	Ser	Gly	
				805					810					815		

Ala Asp Gly Val Leu Ala Gly Ile Thr Leu Val Gly Cys Ala Thr Arg
 820 825 830
 Cys Asn Val Pro Arg Ser Asn Cys Ser Ser Arg Gly Asp Thr Pro Val
 835 840 845
 Leu Asp Lys Gly Gln Gly Asp Val Ala Thr Thr Ala Asn Gly Lys Val
 850 855 860
 Asn Pro Ser Gln Ser Thr Glu Glu Ala Thr Glu Ala Thr Glu Val Pro
 865 870 875 880
 Asp Pro Gly Pro Ser Glu Ser Glu Ala Thr Thr Val Arg Pro Gly Pro
 885 890 895
 Leu Thr Glu His Val Phe Thr Asp Pro Ala Pro Thr Pro Ser Ser Ser
 900 905 910
 Thr Gln Pro Ala Ser Glu Asn Gly Ser Glu Ser Asn Gly Thr Ile Val
 915 920 925
 Gln Pro Gln Val Glu Pro Ser Gly Glu Leu Ser Thr Thr Thr Ser Ser
 930 935 940
 Ala Ala Pro Thr Met Trp Leu Gly Ala Gln Asn Gly Trp Leu Tyr Val
 945 950 955 960
 His Ser Ala Val Ala Asn Trp Lys Lys Cys Leu His Ser Ile Lys Leu
 965 970 975
 Lys Asp Ser Val Leu Ser Leu Val His Val Lys Gly Arg Val Leu Val
 980 985 990
 Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe His Arg Gly Glu Asp Gly
 995 1000 1005
 Gln Trp Asp Leu Ser Asn Tyr His Leu Met Asp Leu Gly His Pro His
 1010 1015 1020
 His Ser Ile Arg Cys Met Ala Val Val Asn Asp Arg Val Trp Cys Gly
 1025 1030 1035 1040
 Tyr Lys Asn Lys Val His Val Ile Gln Pro Lys Thr Met Gln Ile Glu
 1045 1050 1055
 Lys Ser Phe Asp Ala His Pro Arg Arg Glu Ser Gln Val Arg Gln Leu
 1060 1065 1070
 Ala Trp Ile Gly Asp Gly Val Trp Val Ser Ile Arg Leu Asp Ser Thr
 1075 1080 1085
 Leu Arg Leu Tyr His Ala His Thr His Gln His Leu Gln Asp Val Asp
 1090 1095 1100
 Ile Glu Pro Tyr Val Ser Lys Met Leu Gly Thr Gly Lys Leu Gly Phe
 1105 1110 1115 1120
 Ser Phe Val Arg Ile Thr Ala Leu Leu Ile Ala Gly Asn Arg Leu Trp
 1125 1130 1135

Val Gly Thr Gly Asn Gly Val Val Ile Ser Ile Pro Leu Thr Glu Thr
 1140 1145 1150
 Val Val Leu His Arg Gly Gln Leu Leu Gly Leu Arg Ala Asn Lys Thr
 1155 1160 1165
 Ser Pro Thr Ser Gly Glu Gly Thr Arg Pro Gly Gly Ile Ile His Val
 1170 1175 1180
 Tyr Gly Asp Asp Ser Ser Asp Lys Ala Ala Ser Ser Phe Ile Pro Tyr
 1185 1190 1195 1200
 Cys Ser Met Ala Gln Ala Gln Leu Cys Phe His Gly His Arg Asp Ala
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 Val Lys Phe Phe Val Ser Val Pro Gly Asn Val Leu Ala Thr Leu Asn
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 Gly Ser Val Leu Asp Ser Pro Ser Glu Gly Pro Gly Pro Ala Ala Pro
 1235 1240 1245
 Ala Ala Asp Ala Glu Gly Gln Lys Leu Lys Asn Ala Leu Val Leu Ser
 1250 1255 1260
 Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile Gly Asp Gly Glu Asp Asp
 1265 1270 1275 1280
 Glu Thr Glu Glu Cys Ala Gly Asp Val Asn Gln Thr Lys Pro Ser Leu
 1285 1290 1295
 Ser Lys Ala Glu Arg Ser His Ile Ile Val Trp Gln Val Ser Tyr Thr
 1300 1305 1310

Pro Glu

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 <212> PRT
 <213> Mouse

<400> 11

Met Met Glu Ile Gln Met Asp Glu Gly Gly Gly Val Val Val Tyr Gln
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 Asp Asp Tyr Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu
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 Ala Gly Ser Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp
 35 40 45
 Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
 50 55 60
 Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
 65 70 75 80
 Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg

85										90					95															
Glu	Lys	Ala	Leu	Arg	Lys	Gln	Ala	Glu	Glu	Lys	Phe	Ile	Glu	Phe	Glu															
			100					105					110																	
Asp	Ala	Leu	Glu	Gln	Glu	Lys	Lys	Glu	Leu	Gln	Ile	Gln	Val	Glu	His															
		115					120					125																		
Tyr	Glu	Phe	Gln	Thr	Arg	Gln	Leu	Glu	Leu	Lys	Ala	Lys	Asn	Tyr	Ala															
	130					135					140																			
Asp	Gln	Ile	Ser	Arg	Leu	Glu	Glu	Arg	Glu	Ser	Glu	Met	Lys	Lys	Glu															
145					150					155					160															
Tyr	Asn	Ala	Leu	His	Gln	Arg	His	Thr	Glu	Met	Ile	Gln	Thr	Tyr	Val															
				165				170						175																
Glu	His	Ile	Glu	Arg	Ser	Lys	Met	Gln	Gln	Val	Gly	Gly	Ser	Gly	Gln															
			180					185					190																	
Thr	Glu	Ser	Ser	Leu	Pro	Gly	Arg	Ser	Arg	Lys	Glu	Arg	Pro	Thr	Ser															
		195					200					205																		
Leu	Asn	Val	Phe	Pro	Leu	Ala	Asp	Gly	Met	Val	Arg	Ala	Gln	Met	Gly															
	210					215					220																			
Gly	Lys	Leu	Val	Pro	Ala	Gly	Asp	His	Trp	His	Leu	Ser	Asp	Leu	Gly															
225					230				235					240																
Gln	Leu	Gln	Ser	Ser	Ser	Ser	Tyr	Gln	Cys	Pro	Asn	Asp	Glu	Met	Ser															
				245					250					255																
Glu	Ser	Gly	Gln	Ser	Ser	Ala	Ala	Ala	Thr	Pro	Ser	Thr	Thr	Gly	Thr															
			260					265					270																	
Lys	Ser	Asn	Thr	Pro	Thr	Ser	Ser	Val	Pro	Ser	Ala	Ala	Val	Thr	Pro															
		275					280					285																		
Leu	Asn	Glu	Ser	Leu	Gln	Pro	Leu	Gly	Asp	Tyr	Val	Ser	Val	Thr	Lys															
	290					295					300																			
Asn	Asn	Lys	Gln	Ala	Arg	Glu	Lys	Arg	Asn	Ser	Arg	Asn	Met	Glu	Val															
305					310				315					320																
Gln	Val	Thr	Gln	Glu	Met	Arg	Asn	Val	Ser	Ile	Gly	Met	Gly	Ser	Ser															
				325					330					335																
Asp	Glu	Trp	Ser	Asp	Val	Gln	Asp	Ile	Ile	Asp	Ser	Thr	Pro	Glu	Leu															
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Asp	Val	Cys	Pro	Glu	Thr	Arg	Leu	Glu	Arg	Thr	Gly	Ser	Ser	Pro	Thr															
		355					360					365																		
Gln	Gly	Ile	Val	Asn	Lys	Ala	Phe	Gly	Ile	Asn	Thr	Asp	Ser	Leu	Tyr															
	370					375					380																			
His	Glu	Leu	Ser	Thr	Ala	Gly	Ser	Glu	Val	Ile	Gly	Asp	Val	Asp	Glu															
385					390					395				400																
Gly	Ala	Asp	Leu	Leu	Gly	Glu	Phe	Ser	Val	Arg	Asp	Asp	Phe	Phe	Gly															

405										410					415				
Met	Gly	Lys	Glu	Val	Gly	Asn	Leu	Leu	Leu	Glu	Asn	Ser	Gln	Leu	Leu				
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Glu	Thr	Lys	Asn	Ala	Leu	Asn	Val	Val	Lys	Asn	Asp	Leu	Ile	Ala	Lys				
		435					440					445							
Val	Asp	Gln	Leu	Ser	Gly	Glu	Gln	Glu	Val	Leu	Lys	Gly	Glu	Leu	Glu				
	450					455					460								
Ala	Ala	Lys	Gln	Ala	Lys	Val	Lys	Leu	Glu	Asn	Arg	Ile	Lys	Glu	Leu				
465					470					475					480				
Glu	Glu	Glu	Leu	Lys	Arg	Val	Lys	Ser	Glu	Ala	Val	Thr	Ala	Arg	Arg				
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Glu	Pro	Arg	Glu	Glu	Val	Glu	Asp	Val	Ser	Ser	Tyr	Leu	Cys	Thr	Glu				
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Leu	Asp	Lys	Ile	Pro	Met	Ala	Gln	Arg	Arg	Arg	Phe	Thr	Arg	Val	Glu				
		515					520					525							
Met	Ala	Arg	Val	Leu	Met	Glu	Arg	Asn	Gln	Tyr	Lys	Glu	Arg	Leu	Met				
	530					535					540								
Glu	Leu	Gln	Glu	Ala	Val	Arg	Trp	Thr	Glu	Met	Ile	Arg	Ala	Ser	Arg				
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Glu	His	Pro	Ser	Val	Gln	Glu	Lys	Lys	Lys	Ser	Thr	Ile	Trp	Gln	Phe				
				565					570					575					
Phe	Ser	Arg	Leu	Phe	Ser	Ser	Ser	Ser	Ser	Pro	Pro	Pro	Ala	Lys	Arg				
			580					585					590						
Ser	Tyr	Pro	Ser	Val	Asn	Ile	His	Tyr	Lys	Ser	Pro	Thr	Ala	Ala	Gly				
		595				600						605							
Phe	Ser	Gln	Arg	Arg	Ser	His	Ala	Leu	Cys	Gln	Ile	Ser	Ala	Gly	Ser				
	610					615					620								
Arg	Pro	Leu	Glu	Phe	Phe	Pro	Asp	Asp	Asp	Cys	Thr	Ser	Ser	Ala	Arg				
625					630					635					640				
Arg	Glu	Gln	Lys	Arg	Glu	Gln	Tyr	Arg	Gln	Val	Arg	Glu	His	Val	Arg				
				645					650					655					
Asn	Asp	Asp	Gly	Arg	Leu	Gln	Ala	Cys	Gly	Trp	Ser	Leu	Pro	Ala	Lys				
			660					665					670						
Tyr	Lys	Gln	Leu	Ser	Pro	Asn	Gly	Gly	Gln	Glu	Asp	Thr	Arg	Met	Lys				
		675					680					685							
Asn	Val	Pro	Val	Pro	Val	Tyr	Cys	Arg	Pro	Leu	Val	Glu	Lys	Asp	Pro				
	690					695					700								
Ser	Thr	Lys	Leu	Trp	Cys	Ala	Ala	Gly	Val	Asn	Leu	Ser	Gly	Trp	Lys				
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Pro	His	Glu	Glu	Asp	Ser	Ser	Asn	Gly	Pro	Lys	Pro	Val	Pro	Gly	Arg				

725										730					735				
Asp	Pro	Leu	Thr	Cys	Asp	Arg	Glu	Gly	Glu	Gly	Glu	Pro	Lys	Ser	Thr				
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His	Pro	Ser	Pro	Glu	Lys	Lys	Lys	Ala	Lys	Glu	Thr	Pro	Glu	Ala	Asp				
		755					760					765							
Ala	Thr	Ser	Ser	Arg	Val	Trp	Ile	Leu	Thr	Ser	Thr	Leu	Thr	Thr	Ser				
	770					775					780								
Lys	Val	Val	Ile	Ile	Asp	Ala	Asn	Gln	Pro	Gly	Thr	Ile	Val	Asp	Gln				
785					790					795					800				
Phe	Thr	Val	Cys	Asn	Ala	His	Val	Leu	Cys	Ile	Ser	Ser	Ile	Pro	Ala				
				805					810					815					
Ala	Ser	Asp	Ser	Asp	Tyr	Pro	Pro	Gly	Glu	Met	Phe	Leu	Asp	Ser	Asp				
			820					825					830						
Val	Asn	Pro	Glu	Asp	Ser	Gly	Ala	Asp	Gly	Val	Leu	Ala	Gly	Ile	Thr				
		835					840					845							
Leu	Val	Gly	Cys	Ala	Thr	Arg	Cys	Asn	Val	Pro	Arg	Ser	Asn	Cys	Ser				
	850					855					860								
Ser	Arg	Gly	Asp	Thr	Pro	Val	Leu	Asp	Lys	Gly	Gln	Gly	Asp	Val	Ala				
865					870					875					880				
Thr	Thr	Ala	Asn	Gly	Lys	Val	Asn	Pro	Ser	Gln	Ser	Thr	Glu	Glu	Ala				
			885						890					895					
Thr	Glu	Ala	Thr	Glu	Val	Pro	Asp	Pro	Gly	Pro	Ser	Glu	Ser	Glu	Ala				
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Thr	Thr	Val	Arg	Pro	Gly	Pro	Leu	Thr	Glu	His	Val	Phe	Thr	Asp	Pro				
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Ala	Pro	Thr	Pro	Ser	Ser	Ser	Thr	Gln	Pro	Ala	Ser	Glu	Asn	Gly	Ser				
	930					935					940								
Glu	Ser	Asn	Gly	Thr	Ile	Val	Gln	Pro	Gln	Val	Glu	Pro	Ser	Gly	Glu				
945					950				955						960				
Leu	Ser	Thr	Thr	Thr	Ser	Ser	Ala	Ala	Pro	Thr	Met	Trp	Leu	Gly	Ala				
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Gln	Asn	Gly	Trp	Leu	Tyr	Val	His	Ser	Ala	Val	Ala	Asn	Trp	Lys	Lys				
		980						985					990						
Cys	Leu	His	Ser	Ile	Lys	Leu	Lys	Asp	Ser	Val	Leu	Ser	Leu	Val	His				
	995					1000					1005								
Val	Lys	Gly	Arg	Val	Leu	Val	Ala	Leu	Ala	Asp	Gly	Thr	Leu	Ala	Ile				
	1010					1015					1020								
Phe	His	Arg	Gly	Glu	Asp	Gly	Gln	Trp	Asp	Leu	Ser	Asn	Tyr	His	Leu				
1025					1030				1035						1040				
Met	Asp	Leu	Gly	His	Pro	His	His	Ser	Ile	Arg	Cys	Met	Ala	Val	Val				

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Asn Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln		
1060	1065	1070
Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg		
1075	1080	1085
Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val		
1090	1095	1100
Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His		
1105	1110	1115
Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu		
1125	1130	1135
Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu		
1140	1145	1150
Ile Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile		
1155	1160	1165
Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu		
1170	1175	1180
Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg		
1185	1190	1195
Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala		
1205	1210	1215
Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys		
1220	1225	1230
Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly		
1235	1240	1245
Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu		
1250	1255	1260
Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu		
1265	1270	1275
Lys Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg		
1285	1290	1295
Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val		
1300	1305	1310
Asn Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile		
1315	1320	1325
Val Trp Gln Val Ser Tyr Thr Pro Glu		
1330	1335	

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<213> Mouse

<400> 12

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Asp	Asp	Tyr	Cys	Ser	Gly	Ser	Val	Met	Ser	Glu	Arg	Val	Ser	Gly	Leu
			20					25					30		
Ala	Gly	Ser	Ile	Tyr	Arg	Glu	Phe	Glu	Arg	Leu	Ile	His	Cys	Tyr	Asp
		35					40					45			
Glu	Glu	Val	Val	Lys	Glu	Leu	Met	Pro	Leu	Val	Val	Asn	Val	Leu	Glu
	50					55					60				
Asn	Leu	Asp	Ser	Val	Leu	Ser	Glu	Asn	Gln	Glu	His	Glu	Val	Glu	Leu
65					70					75					80
Glu	Leu	Leu	Arg	Glu	Asp	Asn	Glu	Gln	Leu	Leu	Thr	Gln	Tyr	Glu	Arg
				85					90					95	
Glu	Lys	Ala	Leu	Arg	Lys	Gln	Ala	Glu	Glu	Lys	Phe	Ile	Glu	Phe	Glu
			100					105					110		
Asp	Ala	Leu	Glu	Gln	Glu	Lys	Lys	Glu	Leu	Gln	Ile	Gln	Val	Glu	His
	115						120					125			
Tyr	Glu	Phe	Gln	Thr	Arg	Gln	Leu	Glu	Leu	Lys	Ala	Lys	Asn	Tyr	Ala
	130					135					140				
Asp	Gln	Ile	Ser	Arg	Leu	Glu	Glu	Arg	Glu	Ser	Glu	Met	Lys	Lys	Glu
145					150					155					160
Tyr	Asn	Ala	Leu	His	Gln	Arg	His	Thr	Glu	Met	Ile	Gln	Thr	Tyr	Val
			165						170					175	
Glu	His	Ile	Glu	Arg	Ser	Lys	Met	Gln	Gln	Val	Gly	Gly	Ser	Gly	Gln
		180						185					190		
Thr	Glu	Ser	Ser	Leu	Pro	Gly	Arg	Arg	Lys	Glu	Arg	Pro	Thr	Ser	Leu
		195					200					205			
Asn	Val	Phe	Pro	Leu	Ala	Asp	Gly	Met	Val	Arg	Ala	Gln	Met	Gly	Gly
	210					215					220				
Lys	Leu	Val	Pro	Ala	Gly	Asp	His	Trp	His	Leu	Ser	Asp	Leu	Gly	Gln
225					230					235					240
Leu	Gln	Ser	Ser	Ser	Ser	Tyr	Gln	Cys	Pro	Asn	Asp	Glu	Met	Ser	Glu
			245						250					255	
Ser	Gly	Gln	Ser	Ser	Ala	Ala	Ala	Thr	Pro	Ser	Thr	Thr	Gly	Thr	Lys
			260					265					270		
Ser	Asn	Thr	Pro	Thr	Ser	Ser	Val	Pro	Ser	Ala	Ala	Val	Thr	Pro	Leu
		275					280					285			
Asn	Glu	Ser	Leu	Gln	Pro	Leu	Gly	Asp	Tyr	Val	Ser	Val	Thr	Lys	Asn
	290					295					300				

Asn Lys Gln Ala Arg Glu Lys Arg Asn Ser Arg Asn Met Glu Val Gln
 305 310 315 320
 Val Thr Gln Glu Met Arg Asn Val Ser Ile Gly Met Gly Ser Ser Asp
 325 330 335
 Glu Trp Ser Asp Val Gln Asp Ile Ile Asp Ser Thr Pro Glu Leu Asp
 340 345 350
 Val Cys Pro Glu Thr Arg Leu Glu Arg Thr Gly Ser Ser Pro Thr Gln
 355 360 365
 Gly Ile Val Asn Lys Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr His
 370 375 380
 Glu Leu Ser Thr Ala Gly Ser Glu Val Ile Gly Asp Val Asp Glu Gly
 385 390 395 400
 Ala Asp Leu Leu Gly Glu Phe Ser Val Arg Asp Asp Phe Phe Gly Met
 405 410 415
 Gly Lys Glu Val Gly Asn Leu Leu Leu Glu Asn Ser Gln Leu Leu Glu
 420 425 430
 Thr Lys Asn Ala Leu Asn Val Val Lys Asn Asp Leu Ile Ala Lys Val
 435 440 445
 Asp Gln Leu Ser Gly Glu Gln Glu Val Leu Lys Gly Glu Leu Glu Ala
 450 455 460
 Ala Lys Gln Ala Lys Val Lys Leu Glu Asn Arg Ile Lys Glu Leu Glu
 465 470 475 480
 Glu Glu Leu Lys Arg Val Lys Ser Glu Ala Val Thr Ala Arg Arg Glu
 485 490 495
 Pro Arg Glu Glu Val Glu Asp Val Ser Ser Tyr Leu Cys Thr Glu Leu
 500 505 510
 Asp Lys Ile Pro Met Ala Gln Arg Arg Arg Phe Thr Arg Val Glu Met
 515 520 525
 Ala Arg Val Leu Met Glu Arg Asn Gln Tyr Lys Glu Arg Leu Met Glu
 530 535 540
 Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile Arg Ala Ser Arg Glu
 545 550 555 560
 His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr Ile Trp Gln Phe Phe
 565 570 575
 Ser Arg Leu Phe Ser Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg Ser
 580 585 590
 Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro Thr Ala Ala Gly Phe
 595 600 605
 Ser Gln Arg Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser Arg
 610 615 620

Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr Ser Ser Ala Arg Arg
 625 630 635 640
 Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg Asn
 645 650 655
 Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser Leu Pro Ala Lys Tyr
 660 665 670
 Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys Asn
 675 680 685
 Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro Ser
 690 695 700
 Thr Lys Leu Trp Cys Ala Ala Gly Val Asn Leu Ser Gly Trp Lys Pro
 705 710 715 720
 His Glu Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg Asp
 725 730 735
 Pro Leu Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr His
 740 745 750
 Pro Ser Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp Ala
 755 760 765
 Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser Lys
 770 775 780
 Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr Ile Val Asp Gln Phe
 785 790 795 800
 Thr Val Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala Ala
 805 810 815
 Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp Val
 820 825 830
 Asn Pro Glu Asp Ser Gly Ala Asp Gly Val Leu Ala Gly Ile Thr Leu
 835 840 845
 Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg Ser Asn Cys Ser Ser
 850 855 860
 Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala Thr
 865 870 875 880
 Thr Ala Asn Gly Lys Val Asn Pro Ser Gln Ser Thr Glu Glu Ala Thr
 885 890 895
 Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser Glu Ser Glu Ala Thr
 900 905 910
 Thr Val Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro Ala
 915 920 925
 Pro Thr Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser Glu
 930 935 940

Ser Asn Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu Leu
 945 950 955 960
 Ser Thr Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala Gln
 965 970 975
 Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala Asn Trp Lys Lys Cys
 980 985 990
 Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His Val
 995 1000 1005
 Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe
 1010 1015 1020
 His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu Met
 1025 1030 1035 1040
 Asp Leu Gly His Pro His His Ser Ile Arg Cys Met Ala Val Val Asn
 1045 1050 1055
 Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln Pro
 1060 1065 1070
 Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg Glu
 1075 1080 1085
 Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val Ser
 1090 1095 1100
 Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His Gln
 1105 1110 1115 1120
 His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu Gly
 1125 1130 1135
 Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu Ile
 1140 1145 1150
 Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile Ser
 1155 1160 1165
 Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu Gly
 1170 1175 1180
 Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg Pro
 1185 1190 1195 1200
 Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala Ala
 1205 1210 1215
 Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys Phe
 1220 1225 1230
 His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly Asn
 1235 1240 1245
 Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu Gly
 1250 1255 1260

Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu Lys
 1265 1270 1275 1280

Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile
 1285 1290 1295

Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val Asn
 1300 1305 1310

Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile Val
 1315 1320 1325

Trp Gln Val Ser Tyr Thr Pro Glu
 1330 1335

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Ile Leu Lys Asp Val Ala Thr Val Ala Phe Cys Asp Ala Gln Ser Thr
 35 40 45

Gln Glu Ile His Glu Lys Val Leu Asn Glu Ala Val Gly Ala Leu Met
 50 55 60

Tyr His Thr Ile Thr Leu Thr Arg Glu Asp Leu Glu Lys Phe Lys Ala
 65 70 75 80

Leu Arg Ile Ile Val Arg Ile Gly Ser Gly Phe Asp Asn Ile Asp Ile
 85 90 95

Lys Ser Ala Gly Asp Leu Gly Ile Ala Val Cys Asn Val Pro Ala Ala
 100 105 110

Ser Val Glu Glu Thr Ala Asp Ser Thr Leu Cys His Ile Leu Asn Leu
 115 120 125

Tyr Arg Arg Thr Thr Trp Leu His Gln Ala Leu Arg Glu Gly Thr Arg
 130 135 140

Val Gln Ser Val Glu Gln Ile Arg Glu Val Ala Ser Gly Ala Ala Arg
 145 150 155 160

Ile Arg Gly Glu Thr Leu Gly Ile Ile Gly Leu Gly Arg Val Gly Gln
 165 170 175

Ala Val Ala Leu Arg Ala Lys Ala Phe Gly Phe Asn Val Leu Phe Tyr
 180 185 190

Asp Pro Tyr Leu Ser Asp Gly Ile Glu Arg Ala Leu Gly Leu Gln Arg
 195 200 205

Val	Ser	Thr	Leu	Gln	Asp	Leu	Leu	Phe	His	Ser	Asp	Cys	Val	Thr	Leu
210						215					220				
His	Cys	Gly	Leu	Asn	Glu	His	Asn	His	His	Leu	Ile	Asn	Asp	Phe	Thr
225					230					235					240
Val	Lys	Gln	Met	Arg	Gln	Gly	Ala	Phe	Leu	Val	Asn	Thr	Ala	Arg	Gly
				245					250					255	
Gly	Leu	Val	Asp	Glu	Lys	Ala	Val	Ala	Gln	Ala	Leu	Lys	Glu	Gly	Arg
			260					265					270		
Ile	Arg	Gly	Ala	Ala	Leu	Asp	Val	His	Glu	Ser	Glu	Pro	Phe	Ser	Phe
		275					280					285			
Ser	Gln	Gly	Pro	Leu	Lys	Asp	Ala	Pro	Asn	Leu	Ile	Cys	Thr	Pro	His
	290					295					300				
Ala	Ala	Trp	Tyr	Ser	Glu	Gln	Ala	Ser	Ile	Glu	Met	Arg	Glu	Glu	Ala
305					310					315					320
Ala	Arg	Glu	Ile	Arg	Arg	Ala	Ile	Thr	Gly	Arg	Ile	Pro	Asp	Ser	Leu
				325					330					335	
Lys	Asn	Cys	Val	Asn	Lys	Asp	His	Leu	Thr	Ala	Ala	Thr	His	Trp	Ala
			340					345					350		
Ser	Met	Asp	Pro	Ala	Val	Val	His	Pro	Glu	Leu	Asn	Gly	Ala	Ala	Tyr
		355					360					365			
Ser	Arg	Tyr	Pro	Pro	Gly	Val	Val	Ser	Val	Ala	Pro	Thr	Gly	Ile	Pro
	370					375					380				
Ala	Ala	Val	Glu	Gly	Ile	Val	Pro	Ser	Ala	Met	Ser	Leu	Ser	His	Gly
385					390					395					400
Leu	Pro	Pro	Val	Ala	His	Pro	Pro	His	Ala	Pro	Ser	Pro	Gly	Gln	Thr
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Val	Lys	Pro	Glu	Ala	Asp	Arg	Asp	His	Thr	Ser	Asp	Gln	Leu		
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 Leu Arg Ser Pro Ser Ile Lys Leu Arg Arg Ser Lys Ala Gly Asn Arg
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 Arg Glu Asp Leu Ser Ser Lys Val Thr Leu Glu Lys Val Leu Gly Val
 35 40 45
 Thr Val Ser Gly Gly Arg Gly Leu Ala Cys Glu Pro Arg Ser Gly Leu

50					55					60					
Val	Ala	Tyr	Pro	Ala	Gly	Cys	Val	Val	Val	Leu	Phe	Asn	Pro	Arg	Lys
65					70					75					80
His	Lys	Gln	His	His	Ile	Leu	Asn	Ser	Ser	Arg	Lys	Thr	Ile	Thr	Ala
				85					90					95	
Leu	Ala	Phe	Ser	Pro	Asp	Gly	Lys	Tyr	Leu	Val	Thr	Gly	Glu	Ser	Gly
			100					105					110		
His	Met	Pro	Ala	Val	Arg	Val	Trp	Asp	Val	Ala	Glu	Arg	Ser	Gln	Val
		115					120					125			
Ala	Glu	Leu	Gln	Glu	His	Lys	Tyr	Gly	Val	Ala	Cys	Val	Ala	Phe	Ser
	130					135					140				
Pro	Ser	Ala	Lys	Tyr	Ile	Val	Ser	Val	Gly	Tyr	Gln	His	Asp	Met	Ile
145					150					155					160
Val	Asn	Val	Trp	Ala	Trp	Lys	Lys	Asn	Ile	Val	Val	Ala	Ser	Asn	Lys
				165					170					175	
Val	Ser	Ser	Arg	Val	Thr	Ala	Val	Ser	Phe	Ser	Glu	Asp	Cys	Ser	Tyr
			180					185					190		
Phe	Val	Thr	Ala	Gly	Asn	Arg	His	Ile	Lys	Phe	Trp	Tyr	Leu	Asp	Asp
		195					200					205			
Ser	Lys	Thr	Ser	Lys	Val	Asn	Ala	Thr	Val	Pro	Leu	Leu	Gly	Arg	Ser
	210					215					220				
Gly	Leu	Leu	Gly	Glu	Leu	Arg	Asn	Asn	Leu	Phe	Thr	Asp	Val	Ala	Cys
225					230					235					240
Gly	Arg	Gly	Glu	Lys	Ala	Asp	Ser	Thr	Phe	Cys	Ile	Thr	Ser	Ser	Gly
				245					250					255	
Leu	Leu	Cys	Glu	Phe	Ser	Asp	Arg	Arg	Leu	Leu	Asp	Lys	Trp	Val	Glu
			260					265					270		
Leu	Arg	Asn	Thr	Asp	Ser	Phe	Thr	Thr	Thr	Val	Ala	His	Cys	Ile	Ser
		275					280					285			
Val	Thr	Gln	Glu	Tyr	Ile	Phe	Cys	Gly	Cys	Ala	Asp	Gly	Thr	Val	Arg
		290				295					300				
Leu	Phe	Asn	Pro	Ser	Asn	Leu	His	Phe	Leu	Ser	Thr	Leu	Pro	Arg	Pro
305					310					315					320
His	Ala	Leu	Gly	Thr	Asp	Ile	Ala	Ser	Ile	Thr	Glu	Ala	Ser	Arg	Leu
				325					330					335	
Phe	Ser	Gly	Gly	Val	Asn	Ala	Arg	Tyr	Pro	Asp	Thr	Ile	Ala	Leu	Thr
			340					345					350		
Phe	Asp	Pro	Thr	Asn	Gln	Trp	Leu	Ser	Cys	Val	Tyr	Asn	Asp	His	Ser
		355					360					365			
Ile	Tyr	Val	Trp	Asp	Val	Arg	Asp	Pro	Lys	Lys	Val	Gly	Lys	Val	Tyr

370 375 380
 Ser Ala Leu Tyr His Ser Ser Cys Val Trp Ser Val Glu Val Tyr Pro
 385 390 395 400
 Glu Ile Lys Asp Ser His Gln Ala Cys Leu Pro Leu Ser Ser Phe Ile
 405 410 415
 Thr Cys Ser Ser Asp Asn Thr Ile Arg Leu Trp Asn Thr Glu Ser Ser
 420 425 430
 Gly Val His Gly Ser Thr Leu His Arg Asn Ile Leu Ser Asn Asp Leu
 435 440 445
 Ile Lys Ile Ile Tyr Val Asp Gly Asn Thr Gln Ala Leu Leu Asp Thr
 450 455 460
 Glu Leu Pro Gly Gly Asp Lys Ala Asp Gly Ser Leu Met Asp Pro Arg
 465 470 475 480
 Val Gly Ile Arg Ser Val Cys Ile Ser Pro Asn Gly Gln His Leu Ala
 485 490 495
 Ser Gly Asp Arg Met Gly Thr Leu Arg Ile His Glu Leu Gln Ser Leu
 500 505 510
 Ser Glu Met Leu Lys Val Glu Ala His Asp Ser Glu Ile Leu Cys Leu
 515 520 525
 Glu Tyr Ser Lys Pro Asp Thr Gly Leu Lys Leu Leu Ala Ser Ala Ser
 530 535 540
 Arg Asp Arg Leu Ile His Glu Leu Asp Ala Gly Arg Glu Tyr Ser Leu
 545 550 555 560
 Gln Gln Thr Leu Asp Glu His Ser Ser Ser Ile Thr Ala Val Lys Phe
 565 570 575
 Ala Ala Ser Asp Gly Gln Val Arg Met Ile Ser Cys Gly Ala Asp Lys
 580 585 590
 Ser Ile Tyr Phe Arg Thr Ala Gln Lys Ser Gly Glu Gly Val Gln Phe
 595 600 605
 Thr Arg Thr His His Val Val Arg Lys Thr Thr Leu Tyr Asp Met Asp
 610 615 620
 Val Glu Pro Ser Trp Lys Tyr Thr Ala Ile Gly Cys Gln Asp Arg Asn
 625 630 635 640
 Ile Arg Ile Phe Asn Ile Ser Ser Gly Lys Gln Lys Lys Leu Phe Lys
 645 650 655
 Gly Ser Gln Gly Glu Asp Gly Thr Leu Ile Lys Val Gln Thr Asp Pro
 660 665 670
 Ser Gly Ile Tyr Ile Ala Thr Ser Cys Ser Asp Lys Asn Leu Ser Ile
 675 680 685
 Phe Asp Phe Ser Ser Gly Glu Cys Val Ala Thr Met Phe Gly His Ser

690					695					700					
Glu 705	Ile	Val	Thr	Gly	Met 710	Lys	Phe	Ser	Asn	Asp 715	Cys	Lys	His	Leu	Ile 720
Ser	Val	Ser	Gly	Asp 725	Ser	Cys	Ile	Phe	Val 730	Trp	Arg	Leu	Ser	Ser	Glu 735
Met	Thr	Ile	Ser 740	Met	Arg	Gln	Arg	Leu 745	Arg	Glu	Arg	Arg	Gln 750	Arg	Gln
Arg	Gly	Ile 755	Lys	Gln	Gln	Gly	Pro 760	Thr	Ser	Pro	Gln	Arg 765	Ala	Ser	Gly
Ala	Lys 770	Gln	His	His	Ala	Pro 775	Val	Val	Pro	Pro	Ser	Gly	Pro	Ala	Leu
Ser 785	Ser	Asp	Ser	Asp	Lys 790	Glu	Gly	Glu	Asp	Glu 795	Gly	Thr	Glu	Glu	Glu 800
Glu	Leu	Pro	Ala	Leu 805	Pro	Ile	Leu	Ser	Lys 810	Ser	Thr	Lys	Lys	Glu 815	Leu
Ala	Ser	Gly	Ser 820	Ser	Pro	Ala	Leu	Leu	Arg 825	Ser	Leu	Ser	His 830	Trp	Glu
Met	Ser 835	Arg	Ala	Gln	Glu	Thr	Met 840	Glu	Tyr	Leu	Asp	Pro 845	Ala	Pro	Val
Ala 850	Asn	Thr	Gly	Pro	Lys	Arg 855	Arg	Gly	Arg	Trp	Ala	Gln	Pro	Gly	Val
Glu 865	Leu	Ser	Val	Arg	Ser 870	Met	Leu	Asp	Leu	Arg 875	Gln	Ile	Glu	Thr	Leu 880
Ala	Pro	Ser	Pro	Arg 885	Gly	Pro	Ser	Gln	Asp 890	Ser	Leu	Ala	Val	Ser	Pro 895
Ala	Gly	Pro	Gly 900	Lys	His	Gly	Pro	Gln 905	Ala	Pro	Glu	Leu	Ser	Cys	Val 910
Ser	Gln	Asn 915	Glu	Arg	Ala	Pro	Arg 920	Leu	Gln	Thr	Ser	Gln 925	Pro	Cys	Ser
Cys 930	Pro	Asp	Ile	Ile	Gln	Leu 935	Leu	Ser	Gln	Glu	Glu	Gly	Val	Phe	Ala
Gln 945	Asp	Leu	Glu	Pro	Ala 950	Pro	Ile	Glu	Asp	Gly 955	Ile	Val	Tyr	Pro	Glu 960
Pro	Ser	Asp	Ser	Pro 965	Thr	Met	Asp	Thr	Ser 970	Ala	Phe	Gln	Val	Gln	Ala 975
Pro	Thr	Gly	Gly 980	Ser	Leu	Gly	Arg	Met 985	Tyr	Pro	Gly	Ser	Arg 990	Gly	Ser
Glu	Lys	His 995	Ser	Pro	Asp	Ser	Ala 1000	Cys	Ser	Val	Asp	Tyr 1005	Ser	Ser	Ser
Arg	Leu	Ser	Ser	Pro	Glu	His	Pro	Asn	Glu	Asp	Ser	Glu	Ser	Thr	Glu

1010 1015 1020
 Pro Leu Ser Val Asp Gly Ile Ser Ser Asp Leu Glu Glu Pro Ala Glu
 1025 1030 1035 1040
 Gly Asp Glu Asp Glu Glu Glu Glu Gly Gly Thr Gly Leu Cys Gly Leu
 1045 1050 1055
 Gln Glu Gly Gly Pro Arg Thr Pro Asp Gln Glu Gln Phe Leu Lys Gln
 1060 1065 1070
 Leu Phe Glu Thr Leu Ala Asn Gly Thr Ala Pro Gly Gly Pro Ala Arg
 1075 1080 1085
 Val Leu Glu Arg Thr Glu Ser Arg Ser Ile Ser Ser Arg Phe Leu Leu
 1090 1095 1100
 Gln Val Gln Thr Leu Pro Leu Arg Glu Pro Ser Leu Ser Ser Ser Gly
 1105 1110 1115 1120
 Leu Ala Leu Thr Ser Arg Pro Asp Gln Val Ser Gln Val Ser Gly Glu
 1125 1130 1135
 Gln Leu Lys Gly Ser Gly Ala Thr Pro Pro Gly Ala Pro Pro Glu Met
 1140 1145 1150
 Glu Pro Ser Ser Gly Asn Ser Gly Pro Lys Gln Val Ala Pro Val Leu
 1155 1160 1165
 Leu Thr Arg Arg Arg Asn Asn Leu Asp Asn Ser Trp Ala Ser Lys Lys
 1170 1175 1180
 Met Ala Ala Thr Arg Pro Leu Ala Gly Leu Gln Lys Ala Gln Ser Val
 1185 1190 1195 1200
 His Ser Leu Val Pro Gln Asp Glu Val Pro Ser Ser Arg Pro Leu Leu
 1205 1210 1215
 Phe Arg Glu Ala Glu Thr Gln Gly Ser Leu Gly Ser Leu Pro Gln Ala
 1220 1225 1230
 Gly Gly Cys Ser Ser Gln Pro His Ser Tyr Gln Asn His Thr Thr Ser
 1235 1240 1245
 Ser Met Ala Lys Leu Ala Arg Ser Ile Ser Val Gly Glu Asn Pro Gly
 1250 1255 1260
 Leu Ala Thr Glu Pro Gln Ala Pro Ala Pro Ile Arg Ile Ser Pro Phe
 1265 1270 1275 1280
 Asn Lys Leu Ala Leu Pro Ser Arg Ala His Leu Val Leu Asp Ile Pro
 1285 1290 1295
 Lys Pro Leu Pro Asp Arg Pro Thr Leu Thr Thr Phe Ser Pro Val Ser
 1300 1305 1310
 Lys Gly Leu Thr His Asn Glu Thr Glu Gln Ser Gly Pro Leu Arg Glu
 1315 1320 1325
 Pro Arg Lys Ala His Thr Thr Val Glu Lys His Ser Cys Leu Gly Glu

1330 1335 1340
 Gly Thr Thr His Lys Ser Arg Thr Glu Cys Gln Ala Tyr Pro Gly Pro
 1345 1350 1355 1360
 Asn His Pro Cys Arg Gln Gln Leu Pro Val Asn Asn Leu Leu Gln Ala
 1365 1370 1375
 Glu Ser Leu Gln Pro Leu Ser Pro Glu Lys Thr Arg Asn Pro Val Glu
 1380 1385 1390
 Ser Ser Arg Pro Gly Val Ala Leu Ser Gln Asp Ser Glu Leu Ala Leu
 1395 1400 1405
 Ser Leu Gln Gln Cys Glu Gln Leu Val Ala Glu Leu Gln Gly Asn Val
 1410 1415 1420
 Arg Gln Ala Val Glu Leu Tyr Arg Ala Val Thr Ser Cys Lys Thr Pro
 1425 1430 1435 1440
 Ser Ala Glu Gln Ser His Ile Thr Arg Leu Leu Arg Asp Thr Phe Ser
 1445 1450 1455
 Pro Val Arg Gln Glu Leu Glu Val Leu Ala Gly Ala Val Leu Ser Ser
 1460 1465 1470
 Pro Gly Gly Ser Pro Gly Ala Val Ala Ala Glu Gln Thr Gln Ala Leu
 1475 1480 1485
 Leu Glu Gln Tyr Ser Glu Leu Leu Leu Arg Ala Val Glu Arg Arg Met
 1490 1495 1500
 Glu Arg Arg Leu
 1505

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 20 25 30
 Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg Arg Leu Ala Glu Glu
 35 40 45
 Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu Asp Val Arg Leu Gln
 50 55 60
 Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu Ala Pro Asn Glu Lys Leu
 65 70 75 80
 Phe Phe Val Asp Thr Gly Phe Lys Arg Lys Glu Pro Arg Lys Lys Arg
 85 90 95

Thr Leu Val Gln Lys Lys Ser Gln Arg Leu Gln Lys Pro Leu Arg Val
 100 105 110
 Asp Leu Ala Leu Glu Asn His Ser Lys Ile Pro Ala Pro Lys Asp Ile
 115 120 125
 Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu Arg Arg Lys Glu Glu
 130 135 140
 Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu Pro Arg Asp Val Arg
 145 150 155 160
 Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro Thr Pro Lys Ala Lys Pro
 165 170 175
 Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe Tyr Asp Leu Trp Asn Pro
 180 185 190
 Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly Gln Asp Ala Phe Phe Leu
 195 200 205
 Glu Gln Thr Lys Lys Lys Gly Val Arg Arg Pro Gln Arg Leu His Ile
 210 215 220
 Lys Pro Ser Gln Val Pro Ala Val Glu Val Ile Pro Ala Gly Ala Ser
 225 230 235 240
 Tyr Asn Pro Thr

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 <211> 484
 <212> PRT
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<400> 16
 Met Ala Ala Gly Gly Asn Arg Asp Gly Glu Lys Arg Gly Ser Arg Ser
 1 5 10 15
 Gln Ala Asp Ser Gly Phe Leu Gly Leu Arg Pro Thr Ser Val Asp Pro
 20 25 30
 Ala Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp
 35 40 45
 Arg Arg Leu Ala Glu Glu Pro Leu Gly Leu Glu Val Asp Gln Phe Leu
 50 55 60
 Glu Asp Val Arg Leu Gln Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu
 65 70 75 80
 Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Phe Lys Arg Lys
 85 90 95
 Glu Pro Arg Lys Lys Arg Thr Leu Val Gln Lys Lys Ser Gln Arg Leu
 100 105 110
 Gln Lys Pro Leu Arg Val Asp Leu Ala Leu Glu Asn His Ser Lys Ile
 115 120 125

Pro	Ala	Pro	Lys	Asp	Ile	Leu	Ala	His	Gln	Val	Pro	Asn	Ala	Lys	Lys
130						135					140				
Leu	Arg	Arg	Lys	Glu	Glu	Leu	Trp	Glu	Lys	Leu	Ala	Lys	Gln	Gly	Glu
145					150					155					160
Leu	Pro	Arg	Asp	Val	Arg	Lys	Ala	Gln	Ala	Arg	Leu	Leu	Ser	Pro	Pro
			165						170					175	
Thr	Pro	Lys	Ala	Lys	Pro	Gly	Pro	Gln	Asp	Ile	Ile	Glu	Arg	Pro	Phe
			180						185				190		
Tyr	Asp	Leu	Trp	Asn	Pro	Asp	Asn	Pro	Leu	Asp	Thr	Pro	Leu	Ile	Gly
		195					200					205			
Gln	Asp	Ala	Phe	Phe	Leu	Glu	Gln	Thr	Lys	Lys	Lys	Gly	Val	Arg	Arg
	210					215					220				
Pro	Gln	Arg	Leu	His	Ile	Lys	Pro	Ser	Gln	Val	Pro	Ala	Val	Glu	Val
225					230					235					240
Ile	Pro	Ala	Gly	Ala	Ser	Tyr	Asn	Pro	Thr	Phe	Glu	Asp	His	Gln	Ala
				245					250					255	
Leu	Leu	Arg	Glu	Ala	His	Glu	Val	Glu	Leu	Gln	Arg	Glu	Lys	Glu	Ala
			260					265					270		
Glu	Lys	Leu	Glu	Arg	Gln	Leu	Ala	Leu	Pro	Thr	Ser	Glu	Gln	Ala	Ala
		275					280					285			
Thr	Gln	Glu	Ser	Val	Phe	Arg	Glu	Met	Cys	Glu	Gly	Leu	Leu	Glu	Glu
	290					295					300				
Ser	Asp	Gly	Glu	Asp	Glu	His	Glu	Ala	Gly	Arg	Ala	Gly	Gln	Pro	Glu
305					310					315					320
Ala	Gly	Asp	Gly	Thr	Thr	Glu	Ile	Ser	Pro	Thr	Gly	Ala	Ala	Gly	Pro
				325					330					335	
Glu	Lys	Arg	Met	Glu	Lys	Lys	Thr	Glu	Gln	Gln	Arg	Arg	Arg	Glu	Lys
			340					345					350		
Ala	Ala	Arg	Lys	Leu	Arg	Val	Gln	Gln	Ala	Ala	Leu	Arg	Ala	Ala	Arg
		355					360					365			
Leu	Gln	His	Gln	Glu	Leu	Phe	Arg	Leu	Arg	Gly	Ile	Lys	Ala	Gln	Val
	370					375					380				
Ala	Arg	Arg	Leu	Ala	Glu	Leu	Ala	Arg	Arg	Arg	Glu	Gln	Arg	Arg	Ile
385					390					395					400
Arg	Arg	Leu	Ala	Glu	Ala	Asp	Lys	Pro	Arg	Arg	Leu	Gly	Arg	Leu	Lys
				405					410					415	
Tyr	Gln	Ala	Pro	Asp	Ile	Asp	Val	Gln	Leu	Ser	Ser	Glu	Leu	Ser	Gly
			420					425					430		
Ser	Leu	Arg	Thr	Leu	Lys	Pro	Glu	Gly	His	Ile	Leu	Arg	Asp	Arg	Phe
		435					440					445			

Lys Ser Phe Gln Lys Arg Asn Met Ile Glu Pro Arg Glu Arg Ala Lys
450 455 460

Phe Lys Arg Lys Tyr Lys Val Lys Leu Val Glu Lys Arg Ala Tyr Arg
465 470 475 480

Glu Ile Gln Leu

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<211> 27

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 17

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<210> 18

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 18

atgaattctc agttgttctt tgtgacactg a 31